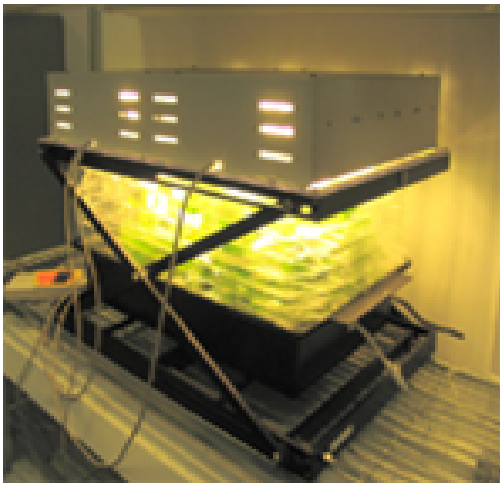
Success Story

Biomass Production System for Education (BPSe)

Description of Innovation



Orbital Technologies Corporation (ORBITEC) has developed the Biomass Production System for Education, (BPSe), a plant growth chamber and system for student science activities. The BPSe is a ground-based research unit that parallels plant growth research being conducted on the Space Shuttle and Space Station. Students can select a plant that has not previously been grown in microgravity and prepare to send it into space. While the plant experiments are being conducted on the International Space Station or the Space Shuttle, students use the BPSe to conduct similar tests on earth to compare with the flight results.

Value Back to NASA

The BPSe project was developed under a Small Business Innovation Research (SBIR) grant sponsored by NASA's Kennedy Space Center Advanced Human Support Technology Program. Four BPSe units have been delivered to Kennedy Space Center and are currently being evaluated. Three units have been delivered to the NASA Specialized Center for Research and Training at Purdue University (NSCORT). They are now being tested in outreach programs by the Outreach Coordinator for Advanced Life Support at NSCORT. Three units have been delivered to the US Department of Agriculture for evaluation. It is anticipated that the remaining two units will be displayed at US Space Camp in Huntsville, Alabama.

Commercial Benefits

The BPSe is being evaluated for use in specific high school and university science programs and will be used in a semester-long teaching study in the spring of 2005. If successful, the BPSe and its related teaching curricula will be available for educators in the 2005 school year. Market research into pricing and distribution continues and further educational activities are being developed. The BPSe will join ORBITEC's *Space Garden* growth chamber in a family of space-related products for biology, agriculture, and life science instruction - and fun.

Innovative Technology Transfer Partnership (ITTP)

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Partnership Contributions

Headquartered in Madison, ORBITEC is Wisconsin's aerospace research and product development leader, proving very strong in the use of the Small Business Innovative Research Program as a catalyst for technology and product development. ORBITEC has had over 160 government contracts exceeding a total of nearly $120M. Most of ORBITEC's current activities and revenue base are technology developments and implementations that have evolved from the SBIR program. ORBITEC has been awarded the Wisconsin's Professional Service Business of the Year (1995), and the Tibbitts Award (1996 and 1999) from the Small Business Administration for outstanding work for the U.S. Government.

ITTP Role

Orbital Technologies Corporation was awarded Phase 1 and Phase 2 SBIR Contracts through Kennedy Space Center's SBIR/STTR Program to address NASA's need for a plant growth system that can grow vegetables and other plants on the Space Station using minimal Space Station resources. In 2003 ORBITEC was issued a Phase 3 contract to develop a plant growth system that is similar to systems for use in space, but as an educational tool in classrooms from the middle school to college level. The ITTP programs are managed by NASA's Chuck Griffin and supported by ASRC Aerospace's Project Specialist, Jennifer Van Pelt.

Other References, Sources

www.orbitec.com
www.spacegarden.net

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